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AN
ENQUIRY,
BY
EXPERIMENTS,
INTO THE
PROPERTIES and EFFECTS
OF THE
MEDICINAL WATERS

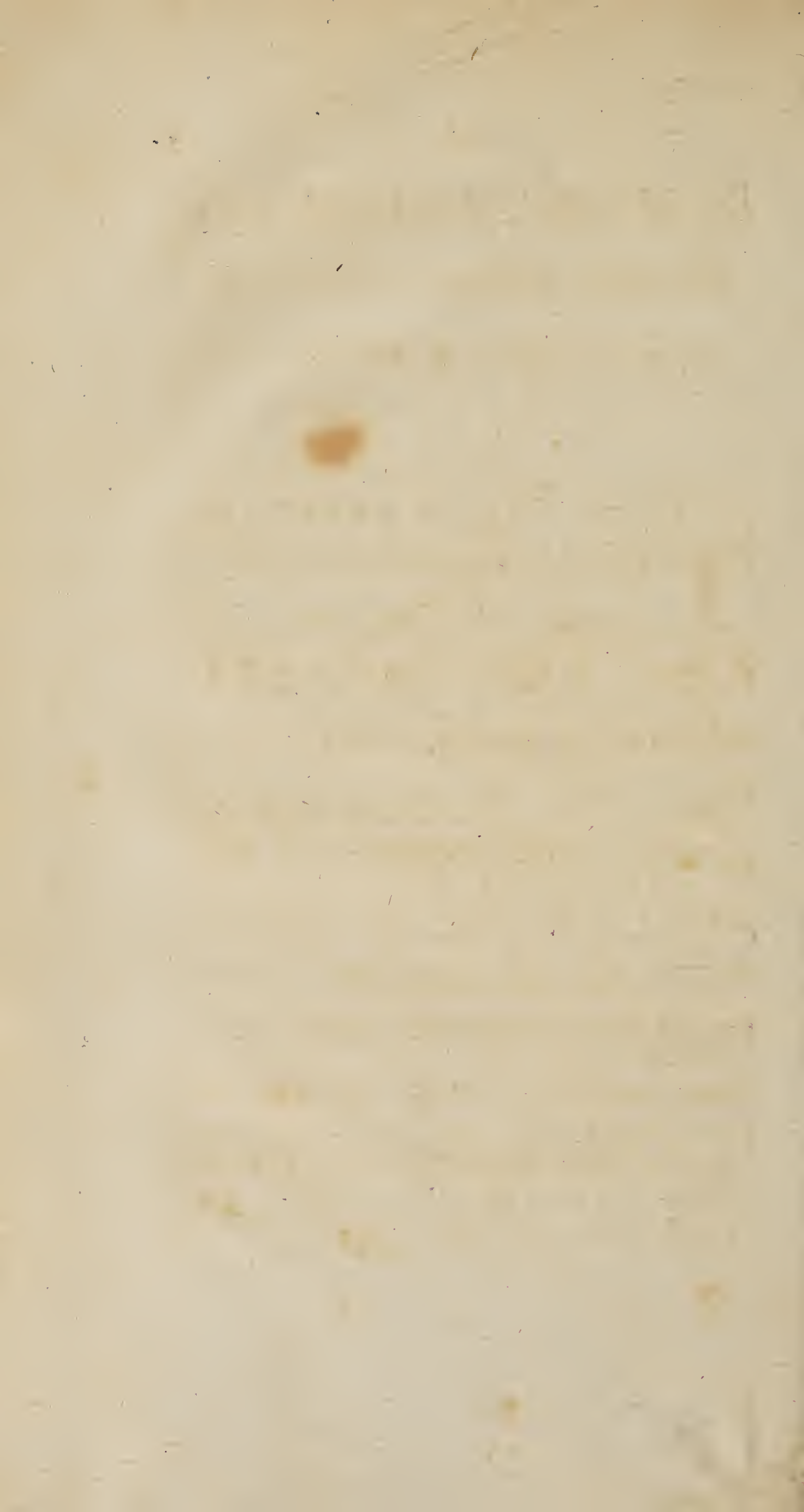
In the COUNTY of ESSEX.

By W. MARTIN TRINDER, LL.B. at Oxford,
and M. D. at the University of Leyden.

Quod potero enitar sedulo.

L O N D O N :

Printed and sold by J. F. and C. RIVINGTON, in St.
Paul's Church Yard; Mr. FAULDER, in Bond-
Street; Mr. Frost, Chelmsford; and Mr. MAR-
SHALL, Grocer, at Romford. 1783.



T O

THE RIGHT HONOURABLE

ROBERT EDWARD PETRE,

LORD PETRE of WRITTLE.

M Y L O R D,

THE high eminence of your noble character, rank, and fortune, in the county of Essex, must be my apology for presuming to offer this book to your perusal. The welfare of the county is an important object of your wish and care; and therefore I hope, that the useful tendency of this work, will render it, in some measure, acceptable

A 2

to

iv DEDICATION.

to your Lordship ; and still further excuse my presumption, for thus testifying the profound respect with which I am,

My Lord,

Your Lordship's very humble
and very obedient servant,

THE AUTHOR.

ROMFORD,
January, 1783:

T H E

P R E F A C E

T O T H E

R E A D E R.

IN this polished and brilliant age, which receives its finest lustre from the fair sex, I should fear to offer this merely useful book, without the ornaments of wit or genius, to the public eye, if I were not well persuaded that, through the influence of the ladies, a due regard for me-

A 3

dicinal

vi P R E F A C E.

dicinal waters hath become fashionable and universal: upon this bright influence I do rely with perfect respect and humility; and I am vain enough to hope, that even this feeble work, by serving as a hint to call forth other provincial enquiries of the like nature, may be the means of saving and prolonging the lives of many persons, who languish under tedious diseases, and know not that their remedy may be found in their own ground or voifinage, The many very different medicinal waters in Effex, as they lay a claim to the cure of many different

different diseases, are proper objects of congratulation to the county; and three miles out of Essex, in the parish of St. Paul, Shadwell, in London, the reader will find a very powerful vitriolic water, which both for external and internal use in the cure of cutaneous diseases, hæmorrhages, and excessive relaxations in both sexes, deserves the best recommendation, and the highest praise.

That the Essex waters have been, in many cases, useful and efficacious, needs no proof; but that women receive greater be-

nefit from them than the men, will clearly appear, if, besides other reasons, we recollect, that they are, in general, more observant of their physician's advice, and closer followers of the salutary rules of temperance.

O temperance! thou best companion and support of all other virtues! thou that addest lustre to the liberty of our nature, and guardest us against the snares of sensuality, custom and example! thou that renderest the memory alert and retentive, the judgment clear, and the wit perceptive and without allay! thou
that

that art the intimate friend of sedate reason, and the sure rock of defence against the rebellious passions ! thou best preserver and restorer of health, best sweetner of life and all its comforts ! thou bountiful rewarder of thy followers and admirers ! how do thine excellencies extort the unwilling commendations of thine enemies ! and with what rapture do thy friends expatiate on thy praise !

Irregular hours and diet, high living, indolence, anxiety of mind, severe study, and passionate excesses of every kind, do
greatly

x P R E F A C E.

greatly retard, if not entirely prevent the salutary effects of a course of medicinal waters : it is also right to observe, that before a course of waters be entered upon, the first passages, or *primæ viæ*, should be cleansed ; that a milk diet should only accompany those waters which do not curdle milk ; and that moderate exercise, early rising, and simple food, be, particularly, insisted on : exercise on horseback and on foot is highly necessary ; but, perhaps, the dancing of country dances in a morning is to be preferred to either ; for, dancing is,
in

in fact, a mixed exercise of riding and walking; it greatly strengthens the system, and it most agreeably recreates the mind (*a*). Fresh country air is
justly

(*a*) The fashionable custom of introducing French and German dances into our assembly rooms, instead of our easy English country dances, commonly excludes persons of thirty years old, and upwards, from this very agreeable exercise; for they have, in general, better sense than to learn the business of a dancer, and they rather chuse to give up the amusement, than strive to figure away in those difficult mazes, which require more time to learn, than ought to be spared for such accomplishments:
it

justly considered as a very great restorative to languid nature ; but the senseless custom of riding for exercise, and for air, in a coach, with all the glasses drawn up, at the rate of four miles in an hour, is a jest to the world, at the expence of the thoughtless persons within the vehicle,

it would be well, therefore, if the masters of the ceremonies at our publick places, would discountenance these foreign dances ; for then, I am sure, that their rooms would be better filled, and the health and entertainment of their company greatly promoted,

I have

P R E F A C E. xiii

I have, now, only to add, that I shall be glad to see my errors, in this work, fairly detected: for the health of my fellow-creatures is much nearer to my heart than the bubbling fame of a pamphleteer: and I do heartily wish, that this plan of confining my enquiries to the waters in one county only, may be followed by other writers; for such pursuits would lead to the discovery of many valuable remedies, and those medicinal waters which are already discovered, would be more accurately examined, and better understood.

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Published by the same Author, and
dedicated to his Royal Highness,
Prince Frederic, the Bishop of Os-
nabrug,

AN
ESSAY

ON THE

ENGLISH GRAMMAR.

Price 1s. 6d.

Printed and sold by J. F. and C. RIVINGTON, in
St. Paul's Church Yard; Mr. FAULDER in
Bond-Street; Mr. FROST, Chelmsford; and Mr.
MARSHALL, Grocer, at Romford.

TILBURY-HALL WATER.

THIS water rises, on a hill, near the river Thames at Tilbury-Hall ; which belongs to Lieutenant Colonel Hunt of the West Essex militia.

It is of an amber colour, like pale rum, and it has a full and soft taste in the mouth ; not very unlike that of milk and water ; and it is inodorous.

1. Rhubarb cast an orange colour in this water, which, after standing, changed to a red.

2. Saccharum Saturni made the water very milky, and it deposited a white sediment.

B

3. A

3. A solution of quicksilver in nitrous acid, turned it milky, and it cast down a white, and a grumous sediment.

4. Mercury sublimata corrosive cast down a grumous sediment, which was tinged with a yellow colour.

5. Syrup of violets cast a deep green colour.

6. Logwood cast a deep red colour.

7. Spirits of sal ammoniac cast a white cloud in this water, and a white adherence to the glass, but no sediment.

8. It did not curdle milk though boiled with it in equal quantity.

9. It effervesced with vitriolic acid, but no sediment appeared, and the water became more limpid; fixt vegetable alkali was then applied; which cast down a small sediment.

10. Galls cast, at first, a dun colour, but after standing some hours, a green circle

circle appeared near the rim of the glafs.

11. It curdled soap in fine grumes, and alfo after it had been long boiled (*a*).

12. Fixed vegetable alkali caft down a white fediment.

13. A folution of quick lime caft down a copious fediment.

14. Cauftic volatile alkali caft down a fmall fediment, the liquor was then filtered, and fixed vegetable alkali was applied, which caft down a further fediment.

15. It efferved with alum in a fmall degree, and a pearl coloured fediment appeared.

(*a*) Dr. Ruty (the celebrated writer on mineral waters) was of opinion (as this water, when cold, curdled soap, but did not curdle milk when boiled with it) that its acid was loft by decoction : but if this author had tried the water (when half boiled away) with soap, he would have found that the acid ftill remained, and even in a more concentrated ftate.

16. The *sal cœrulefaciens* of Dr. Menish of Chelmsford, in twelve hours, caused no discoloration (*b*).

17. The matter remaining, after evaporation, lay still on a red hot shovel : it effervesced with oil of vitriol, and sent forth the peculiar fume of sea salt.

The truth of these experiments seems to be well enough confirmed by the analysis of the celebrated Dr. Bryan Higgins, which, for the satisfaction of the curi-

(*b*) I have not asked the permission of my very ingenious and learned friend Dr. Menish of Chelmsford, to reveal the manner of preparing his *sal cœrulefaciens*, and therefore I am not at liberty to discover it; but I may thus far acquaint the chemical world, that it is an admirable improvement of the “*liqueur saturée de la matiere colorante du bleu de Prusse* of Mr. Macquer;” for, in the composition of the *sal cœrulefaciens*, there is not the least ferruginous impregnation; and therefore it is a sure detector of iron in mineral waters.

ous,

ous, I have here copied from Mr. Ellison's advertisement in a newspaper.

“ A Winchester gallon of the Tilbury-Hall water marked No. I. contains

dwt. grs.

Of calcareous earth faturated

with acidulous gas - - - 1 0

Of true nitre with basis of fixed

vegetable alkali - - - 3 0

Of sea falt - - - 3 $1\frac{1}{4}$

Of mineral alkali - - - 0 1

Of mineral oleaginous matter

about - - - 0 1

7 $3\frac{1}{4}$

“ Two quarts of acidulous gas, which is, in density, to temperate atmospheric air, nearly as 2 to 1, are contained in each gallon of this water, beyond the quantity of acidulous gas retained by the

B 3 calcareous

calcareous earth, above mentioned, in the heat of boiling water."

This water hath been found to be very useful in the cure of diseases arising from acidity in the first passages, such as heart-burn, sour eruptions, flatus, and indigestion; and I am of opinion, that it will be found particularly serviceable in that sort of gout which is occasioned by great debility in the organs of digestion, which arises from an imperfect fermentation in the stomach. This gout, if preceded by sour vomitings, hath been often known to give way to the frequent use of alkalis in small doses, roborants, and absorbent diluents; and herein, the waters at Tilbury may be safely relied on.

As a corrector of acidity this water is likely to do good in hysterical and in hypochondriacal cases, particularly in the melancholia nervea; for although it
be

be not an easy matter to prove that an acid acrimony can pervade the brain, and thereby, the origin of the nerves, yet we know that an acid in the stomach or intestines may so irritate the numerous ramifications of nerves therein dispersed, as to occasion those wonderful affections of the brain, which, even during their influence, are quite contrary to the approbation of the will. To this irritation of the nervous system, by an acid in the first passages, are owing, in most cases, the convulsive fits of infants, which, therefore, can only be cured by testaceous powders and absorbent earths.

The Tilbury waters are recommended by a crowd of cases, as efficacious in the cure of diarrhœa, and even dysentery: if, indeed, they have a relaxing power to restore the external circulation as well as to correct any acrimony in the in-

testines, they justly deserve very peculiar regard.

A due attention to the circumstances of a patient's case can alone ascertain the proper doses of this and of all other medicinal waters. The body should be kept moderately open during a course, and a quart of this water in a day is usually considered as a sufficient quantity.

N. B. This water is sold by Mr. Ellifon, a chymist, at his warehouses in St. Alban's street, Pall-mall, and also in Whitechapel, near Red-Lion street.

TILBURY

TILBURY WATER FROM THE RECTOR'S WELL.

THIS water rises at a little distance from Tilbury-hall, on the side of the hill, and it issues from a pump in the parsonage-house.

It is inodorous; its taste is agreeable; but it is somewhat less full in the mouth, and it has less of the amber colour than the other water.

1. A solution of the sal cœrulefaciens cast a perceptible Prussian blue colour in the water that was freshly drawn from the pump.

2. The matter that remained after evaporation sparkled a little, and melted away in blisters on the red hot shovel, leaving a white film.

In

In all the other experiments it shewed the same appearances as the Tilbury-hall water.

Dr. Higgins's Analysis of this water, as published by Mr. Ellifson, is as follows :

“ A Winchester gallon of Tilbury water, which was bought of Mr. Owen, contains

	dwt.	grs.
Of calcareous earth saturated		
with acidulous gas -	0	10 $\frac{1}{2}$
Of true nitre, with basis of		
fixed vegetable alkali -	1	8
Of sea salt -	2	0
Of mineral alkali -	0	0 $\frac{1}{2}$
Of mineral oleaginous mat-		
ter, about -	0	0 $\frac{1}{2}$
	<hr/>	
	3	19 $\frac{1}{2}$
	<hr/>	

A lit-

“ A little more than a quart of acidulous gas, of twice the density of temperate air, is contained in each gallon of this water, exclusive of the quantity of acidulous gas retained by the calcareous earth in the heat of boiling water.”

It appears from this Analysis, when compared with the other, that this water contains much less matter than the Tilbury-hall water; but, nevertheless, the late Rector of Tilbury, the Churchwardens, and the other inhabitants of the parish, did certify, “ that the Rector’s Well water had been analysed by several eminent Physicians, who found it to afford the same principles as the other, except that in this they are in greater quantity.”

I am inclined to think that this water differs from the other, not so much in containing a less quantity of matter,

as in possessing less fixed alkali, but more of the nitrum calcarium, or purging salt of Dr. Rutty, and also a little portion of iron ; but how far these differences, as also different quantities of the same matter may occasion various combinations, so as to affect the colour, the taste, and its other properties, must be left to future trials and observation.

N. B. The waters at Tilbury deposit but little or no sediment by keeping ; they bear transportation into foreign countries very well : and they continue, many years, in well corked bottles, without any considerable diminution of their virtues.

This water from the Rector's Well is sold at Mr. Owen's warehouse near Temple Bar, and at the Water warehouse in Saville-row, in London.

G I D E A-

GIDEA-HALL WATER

RISES on the bank of a canal in the park of Richard Benyon, Esq; near Romford, in Essex. A great quantity of ochreous earth appears in the channel of this spring, and also in various parts of the adjacent land.

1. Its taste is remarkably ferruginous, but, nevertheless, the spirituous part of the water conveys a very agreeable sense of freshness to the mouth.

2. An ounce of this water, with half a grain of galls, became of a black colour.

3. One grain of powdered logwood, in an ounce of this water, produced a deep blue colour.

4. It became, with syrup of violets, of a tawny green colour.

5. It

5. It soon blackened the blade of a knife.

6. A solution of phlogistic alkali, when dropped into this water, instantly cast down a black sediment, and a green colour appeared in the glass (c).

7. The fixed and volatile alkalis cast down red sediments.

8. Caustic volatile alkali cast down a red sediment; the liquor was then filtered; and fixed vegetable alkali was applied, but there appeared no further sediment.

(c) This experiment proves that the colouring principle of Prussian blue is derived entirely from a combination of iron and phlogiston; for if the alkali had been better charged with phlogiston, the Prussian blue colour, instead of the green, would have appeared in this experiment; the alkali uniting with the acid of the martial earth; and the phlogiston, with the iron, forming Prussian blue.

9. It

9. It effervesced with oil of vitriol, and the liquor became more limpid; caustic volatile alkali was then applied, and a copious sediment appeared.

10. To some few drops of vitriolic acid in this water, fixed vegetable alkali was applied, but no sediment appeared.

11. It did not curdle milk, though boiled with it in equal quantity.

12. It curdled soap in fine grumes, and also after it had been long boiled.

13. It did not boil beef of a red colour.

14. This water, after it had been half boiled away and filtered, produced, with galls, a green circle at the top of the glass, and a red colour elsewhere; and with logwood a red colour.

15. The matter remaining after evaporation, sparkled greatly on the hot iron, and it sent forth a blue flame.

16. The

16. The ochreous matter that was taken from the channel of the spring, when dried in a crucible, was powerfully attracted by the loadstone.

17. This water after it had been kept in a bottle, closely corked, for a month, (although it had deposited much ochreous matter) tasted strongly ferruginous, and with galls it cast a black, and with logwood a blue colour. Hence we learn, that this water will bear carriage to remote places; and if some few drops of oil of sulphur by the bell, be added to each quart, it will be preserved, for a long time, without much diminution of its virtue.

From these experiments I may venture to place this water in the first class of chalybeates. It is also impregnated with magnesia glauber's salt, and with sulphur.

In

In dropfy, arifing from debility, and following the intermittenr fever (which is commonly called the ague) this water will be of great fervice ; for it powerfully reftores the tone of the vifcera, and by its fulphureous impregnation, and purgative quality, (which, however, is very fmall in proportion to its other powers) it attenuates the fluids, and expels noxious matter from the body.

In hypochondriacal and hyfterical difeafes, in obftructions of the liver, fpleen, mefentery, and uterus, in relaxations and weaknefs, (where there be palenefs and languor) this water is likely to be of great fervice ; for it is a corroborant, a deobftruent, and alfo a purging medicine. When the ftomach be weak and greatly injured, by intemperance, it may be proper to add to each half pint twenty drops of the fpiritus

C

volatilis

volatilis aromaticus, or a small portion of the tinctura aromatica. If a quart of this water be drank between the hours of seven and eleven in the morning, a dose of stomachic wine may be drank at nine; and this course may, with great advantage, be pursued for some few weeks; but it is to be noted that, in general, this water requires not these warm aids; for its sulphur enables the martial impregnation readily to mix with the juices in the body, and there to exert its powers with activity and force.

In the low nervous fever this water has acquired some reputation, and justly; for if the cause of this fever be some matter affecting the nerves, so as sometimes to hinder their influence, and at other times to occasion too great an exertion of it, this water, by clearing
 I away

away obstructions, and by strengthening and enlivening the nervous system, will remove it.

I am sorry to inform the Ladies that tea must be condemned as improper during a course of this water; for tea, like other austere vegetables, will precipitate the ferruginous particles in the water, and render them unfit to enter into the lacteals and absorbents, and so to execute their desired office.

If the worthy owner should ever think fit to honour the Naiad of this fountain with any ornaments, the following inscription may be a proper one:

Obstructum referat, durum terit, humida fccat.

Debile fortificat; si tamen arte bibis.

HORN-CHURCH-LANE WATER.

IN Horn-Church-lane, about a mile from Romford, a small spring of water rises to view, which, I believe, hath not been, hitherto, much noticed nor regarded.

1. It is perfectly clear ; it has no peculiar taste ; and it is inodorous.

2. Galls cast a dun, changing to an amber colour.

3. Rhubarb cast an orange colour.

4. The mineral acids caused an effervescence, and the water became, if possible, more limpid.

5. Logwood cast a red colour.

6. Syrup of violets cast a green colour.

7. A solution of silver in nitrous acid rendered the water milky.

8. With saccharum saturni it became milky.

9. Lime

9. Lime water did not cast down any sediment.

10. It mixed smoothly with soap, without any coagulation.

11. It boiled smoothly with milk, without forming any curd.

12. Beef boiled in it became, in many parts, of a red colour.

13. The fixed and volatile alkalis did not cast down any sediment in this water.

14. Two quarts of this water, unfiltered, when evaporated to driness, left only three fourths of a grain of matter, which had a strong alkaline taste, and with mercury sublimata corrosive, it became of a red and yellow colour.

From these experiments, it appears, that this, almost, pure water is impregnated with an alkaline salt, and with but little or no terrestrial matter.

This soft water well answers all the purposes of dilution ; passing, quickly, through the most minute canals, diluting and sweetning the acid and tartareous dyscracy of the juices, and thereby curing many chronical diseases. These wonderfully minute particles of soft and pure water afford us a very curious speculation ; for it is certain, that they pass through the minutest vessels of the minutest insects, even of such as are, with difficulty, discoverable by the most powerful magnifier ; and yet these very small creatures have organised bodies, containing myriads of little tubes, through which the fluids (the basis of which is water, that constitute their nourishment) continually circulate ; but the hard waters do not pass so readily, being clogged with much extraneous matter, and therefore animals, in general, give the preference

ference to soft water ; and, perhaps, to this, as to the chief cause, may be attributed the long lives of the inhabitants of Switzerland, who drink the purest waters, and live upon the highest mountains in Europe.

This excellent water, if used as a common drink, will act as a good solvent in all coagulations from acids ; it is likely to retard the approaches of an early gout, and to be serviceable where there be a sluggish viscous phlegm, (occasioned by the acetous fermentation in the stomach) and also it may do good in concretions from fat tenacious humours, as in jaundice, rheumatism, and scurvy.

Bread made from this light water must be excellent ; and it deserves the regard of the frugal laundress, for she will use less soap in washing her linen with this, than with common water.

THE FOREST WATER

RISES on the north side of the forest, in the parish of Stapleford Abbots, on an ascent, and nearly full south to a good house of grey brick on the neighbouring hill, which is about five miles from Romford.

1. It has an earthy and also a brackish taste; it has an earthy smell, and its colour is whitish.

2. One grain of logwood in an ounce of this water cast a mazarine blue colour.

3. With galls it appeared of a diluted red colour, but after standing, a green colour appeared at the top of the glass.

4. Phlogestic alkali and vitriolic acid cast a fine Prussian blue colour in this water.

5. The

5. The fixed and volatile alkalis threw down white sediments.

6. With saccharum saturni it became milky, and it cast down a white sediment.

7. Rhubarb cast a red colour.

8. With alum it became milky, and it threw down a copious sediment.

9. It curdled soap in fine grumes.

10. Boiled with milk in equal quantity it formed a curd and a white whey.

11. It boiled beef, in many parts, of a red colour.

12. With a solution of quicksilver in nitrous acid, a grumous and white sediment appeared.

13. One quart of this water evaporated to driness produced 100 grains of white matter, which tasted saltish: it effervesced with vitriolic acid, and sent forth the peculiar fume of sea salt: it
instantly

instantly changed the colour of fyryp of violets to a green : it melted, in blisters, on the hot iron, but it did not sparkle : it became somewhat humid in the air ; and half a dram, which was boiled in half a pint of milk, produced curds and whey.

14. This water when evaporated to a third part of its first quantity, became very brackish and bitter ; and when evaporated still lower it produced crystals, the bases of which were even with the surface of the liquor, and their apices pointed downwards.

From these experiments it appears that this water, besides its bitter purging salt, is impregnated with iron and sea salt. In colics, whether bilious, flatulent, or nephritic, it has been used with good effect, but especially if drank warm, or used as a clyster.

The

The rustics in the neighbourhood usually apply to it twice in a year as to a thorough cleanser of the system; and they say, that three or four pints commonly produce six or eight stools, but they complain of a soreness in ano, during its operation, and therefore I would advise those persons who are subject to irritation, to be cautious in the use of it. This water is said, and indeed it is very likely to do good in cutaneous foulness of the skin, in removing pimples and obstinate pustules attended with heat and itching, and also in the cold scurvy attending phlegmatic habits, especially if half a dram of common salt be added to each half pint of the water.

It is said also to cure sore eyes and sore legs; but the hope of success in the cure of inflammations in the eyes would be greater, if to each table spoonful of this
water

water four or five drops of liquid laudanum were to be added.

This water deserves a trial in violent head-achs arising from too great a viscosity of the fluids, and also in cachexy, where the body be bloated and pale; for waters of this description (especially if enlivened by the addition of a little salt) stimulate the vessels, thin the fluids, carry off the foul humours by stool, urine, or vomit, and then, by their invigorating power, they enable the vessels to resist a fresh oppression.

WEALD-

WEALD-HALL WATER

RISES in a field nearly opposite to Weald-Hall, belonging to Christopher Towers, Esq; in the parish of South Weald, about five miles from Romford.

The spring is well sheltered from the weather by an arch of brick : the water appears of a bluish colour when viewed from the top ; it has a faintish taste, but, in my opinion, not a disagreeable one.

1. It effervesced with vitriolic acid, but no sediment appeared. Fixed vegetable alkali was then applied, and there appeared a copious sediment.

2. With highly rectified spirits of wine it cast down a small sediment.

3. Logwood

3. Logwood cast a red colour in this water.

4. Rhubarb cast first an orange, then a red colour.

5. Alum cast down a copious sediment. It cast a green colour with fyrup of violets.

6. Fixed alkali threw down a white sediment.

7. Two parts of this water, when boiled with one of milk, produced no curd nor coagulation.

8. It boiled meat whiter than its natural colour.

9. It curdled soap in fine grumes.

10. With galls it was not, at first, discoloured, but after standing some hours a green circle appeared at the rim of the glafs.

11. A solution of quicksilver in nitrous

trous acid produced in this water a very yellow sediment (*d*).

12. Saccharum saturni cast down a yellowish sediment.

13. Mercury sublimata corrosive turned it wheyish, with a variegated scum.

14. Distilled vinegar in this water struck the nose with a faint scent of boiled eggs.

15. It gave a leaden hue to silver that had been immersed in it for 48 hours.

16. Two quarts, evaporated to dryness, left twenty-two grains of brownish matter which sparkled on the hot iron.

17. The black sludge which is intermixed with the clay in the neighbour-

(*d*) This is a very good proof of selenites in mineral waters, for in this double decomposition the nitrous acid combines with the calcareous earth; and the vitriolic acid with the mercury, forming turpeth mineral in the sediment,

hood

hood of the well, when dried, in a crucible, sparkled and stunk on the hot iron.

These experiments tend to prove, that this water is chiefly felenitic, with a small impregnation of sulphur. It is considered, by the common people, as a purging water, but, I think, with no reason; for although it be drank in very large quantities, it will not act as a purgative in some constitutions (*e*).

The drying and astringent quality of this water must be of great service when the animal secretions become too profuse;

(*e*) It is worth notice that even common cold water, in very considerable quantity, is, in some cases, purgative; for it operates by its bulk, its coldness, and tenuity, stimulating the peristaltic motion, invigorating the enfeebled viscera, and thus pushing forwards the contents faster, and evading the absorption of the lacteals.

and

and in all unnatural discharges of blood whether by spitting, stool, or urine, in excessive menstrual and hæmorrhoidal fluxes; in the fluor albus, diabetes, profuse sweating, and enormous fluxes of the belly, whether diarrhœa or dysentery.

It is a well supported opinion that in rebellious diseases of the skin, not venereal, it is better to begin with a course of sulphureous waters, than with the preparations of mercury, for these are commonly safe and effectual; whereas mercury enfeebles the constitution, and very often proves inefficacious. I have heard, that the common people in the neighbourhood wash their sores with this water with good effect; but if they were to make trial of the black fludge about the well, I think that they would not repent of the experiment.

D

In

In common cardialgia and in cold habits, wherein the quantity of serum in the blood is greater than it ought to be, in proportion to the red particles; and where there be a slow circulation, this water bids fair to do essential service, especially if drank blood warm. Some few of the lesser cardamom seeds may be added in order to render it more grateful to the stomach. In cold rheumatisms, in temperaments of the description as above, where there be no fever, but tumors and weakness in the joints, there is not, perhaps, a better remedy than sulphur, both internally taken, and externally applied; and its external application, in this disease, doth not appear to occasion any *μεταστας*, that monstrum horrendum of physicians!

UPMINSTER

UPMINSTER WATER.

THIS spring rises on the lower side of a common, near Tylers-hall, and not far distant from the village of Warley, which is about five miles from Romford.

It has the taste of a weak solution of the Epsom salt in water, but more earthy. It is somewhat turbid, and its colour is greenish.

1. With lime water it cast down a white sediment.

2. The fixed and volatile alkalis cast down a white sediment.

3. Rhubarb cast a deep red colour.

4. Logwood cast first a purplish, then a red colour.

5. With fyrup of violets it became green.

D 2

6. Distilled

6. Distilled vinegar did not cast down any sediment.

7. Rectified spirits of wine did not cast down any sediment; but, after standing, a white adherence appeared on the sides of the glass.

8. With vinegar of lead it cast down a white sediment.

9. A solution of mercury, in nitrous acid, cast down a white sediment, which, after standing some time, became yellowish.

10. It effervesced with vitriolic acid; the liquor soon after became very limpid, and no cloud nor sediment appeared: Caustic volatile alkali was then applied, which cast down a copious sediment.

11. It curdled soap in fine grumes.

12. When boiled with milk, in equal quantity, it formed a very strong curd, and a greenish coloured whey.

13. Galls

13. Galls cast, at first, a reddish brown colour; but after some time a broad green circle appeared near the rim of the glass.

14. It did not blacken the colour of silver, nor heighten the colour of gold.

15. It boiled beef of a red colour.

16. A solution of alum turned it milky, and it cast down a copious sediment.

17. When this water was boiled away to half its first quantity it became nauseously bitter; the matter remaining after the evaporation of a quart of this water, weighed 76 grains; it had a bitter, and somewhat of a saltish taste. It melted in blisters on the hot iron, but it did not sparkle, nor burn blue. Half a dram of this matter, when boiled with half a pint of milk, produced a very strong curd, and a green whey.

These experiments will not allow me to think, with other writers, that this water is either sulphureous or aluminous; but it appears to be impregnated with the *sal catharticum amarum*, and with absorbent earth. Its cooling alterative, and purgative quality, cannot be enough recommended to patients of choleric and adust habits. An habitual costiveness hath been known to give way to it, and I recommended the whey, made from this water, to an hectically disposed patient, who found wonderful relief from its use.

It will be found very serviceable (because it evacuates without heating the system) to women after fifty years old, and also to studious and sedentary men of that age, who are subject to heats, flatulence, redundancy of blood, loss of appetite,

appetite, pains in the back, and swellings of the feet.

After hard drinking, this water will be found to be very pleasant and wholesome; and if the Bacchanalian were wise, it might, possibly, rescue him from those very disagreeable consequences that usually attend a life of intemperance.

In putrid and inflammatory fevers, whether the body be hot, dry, and costive, or there be purple spots, and bloody stools, the whey made from this water and milk, and agreeably sharpened with lemon-juice, will prove to be very salutary and refreshing; or it may be rendered more agreeable by adding currant-jelly, or syrup of raspberries.

The virtue of this water extends also to the urinary passages, which it must, powerfully, cleanse and cool; and it may

be very serviceable in all preternatural
 heats of those parts; in venereal taints,
 and in the ardor urinæ, whether pro-
 ceeding from the acrimony of the salts
 of the blood, or from the gonorrhœa
 virulenta.

WITHAM

WITHAM WATER.

THIS well of water is about a mile distant from the market town of Witham, in Essex, in the grounds adjoining Witham Place, which belongs to the Right Honourable Lord Stourton.

It is perfectly clear and limpid; it has a ferruginous taste, and it possesses, at the spring-head, a certain freshness, which renders it agreeable to the palate and stomach.

1. Galls cast a purple colour at the fountain head; but when the water had been drawn some hours, galls cast only a diluted red.

2. Logwood cast a deep purple colour at the fountain head (*f*).

3. A

(*f*) It is a common opinion that the neutral salt, constituting the chalybeate principle in mineral waters,

3. A solution of silver cast down a thick and white sediment, which, after standing, became blue, and then black.

4. Caustic volatile alkali threw down a white sediment.

5. A

ters, is formed by a volatile acid, combined with earth of iron; and that from its exposure to common air, the acid (from its great volatility, and little attraction to the earth of iron) flies off, leaving the iron behind in the sediment. Undoubtedly this avo-lation takes place in a certain degree; but we ought not from hence to argue that chalybeates are only useful at their spring-head; for even the Witham water, (which is said to possess this volatile and subtile spirit in a very high degree) after having been well corked, but not refined over, and sent to Romford, and kept a month, struck a purple colour, with logwood, and retained a very ferruginous taste;—indeed the bottles were so admirably well corked by Mr. Croke, of the George Inn, (who, for his great attention to the satisfaction of his guests, well deserves the favours of the public) that the volatile spirit might almost as easily pass through the substance of the glass bottles, as through the corks.

5. A solution of the sal cœrulefaciens of Dr. Menish, of Chelmsford, produced a cloud of the colour of Prussian blue in this water.

6. The fixed and volatile alkalis cast down a white sediment.

7. It effervesced with oil of vitriol, but no sediment appeared, and the liquor became more limpid.

8. Syrup of violets turned it green.

9. Rhubarb cast a red colour.

10. It did not curdle milk, although boiled with it in equal quantity.

11. Lime water cast down a grumous sediment.

12. To vitriolic acid in this water, caustic volatile alkali was applied, which cast down a grumous sediment.

13. To vitriolic acid in this water, fixed vegetable alkali was applied, which did not cast down any sediment.

14. Two

14. Two quarts of this water evaporated to driness, produced a yellowish brown matter, in which were many black particles; this matter on the hot iron sent forth a feint blueish flame, and a perceptible smell of sulphur.

From these experiments, this water appears to be a brisk chalybeate, and impregnated with a little sulphur, and magnesia glauber's salt;—but the purgative quality of this water is so small in proportion to its other ingredients, that it will only tend to keep the body in due order, without enfeebling it by excessive evacuations.

In nervous diseases, light chalybeate waters of this class, together with cold bathing, temperance, exercise, relaxation of mind, abstinence from malt liquors, and a more sparing use of animal food, are far more likely to do good, than
castor,

castor, saffron, the gums, the volatile salts, spirituous liquors, and drastic purges.

This water has, with reason, been long famous for its power in strengthening constitutions that have been weakened by long illness; and also, where an acid be the cause of obstructions, it removes it (g).

Mrs. Sly, who lives at Witham, and who was at the point of death, through weakness from excessive uterine dis-

(g) It has been observed by Cartheuser, in his *Fundamenta Materiæ Medicæ*, that the same preparation of steel may open or confirm obstructions of the viscera, according to the diversity of their causes: Thus, if an acid prevail in the primæ viæ, it is corroded and dissolved by the iron, and so forms a sort of vitriolum martis, the operation of which it imitates by constringing lax fibres, and curing diseases thereon depending; but if the obstructions be owing to spasms, it confirms them.

charges,

charges, was entirely cured and restored to health by the sole use of this water.

Mrs. Bull, of Witham, in her 40th year, complained, when she was four months gone with child, of great sourness on her stomach, attended with sour eructations and perpetual sickness, which continued for three quarters of a year after delivery; and during all this time, she was frequently troubled with excruciating pains in the intestines. After eating her belly usually became very hard; and great debility of the system came on. She had tried many medicines, in vain; but, at length, trusting to this water alone, she was soon relieved from her complaints, and perfectly restored to health.

SPRING-

SPRINGFIELD WATER.

THIS water rises on the sedgy bank of the river Chelmer, about a mile eastward from Chelmsford. It is clear and inodorous, and it throws up bubbles, and a whitish coloured sand to the surface of the well; which is no bad sign of a perpetual spring.

1. A solution of quicksilver in nitrous acid cast a yellow adherence round the bottom of the glass, which adherence, after standing two days became black.

2. It effervesced with vitriolic acid, and it cast bubbles round the glass, but no sediment: to this liquor caustic volatile alkali was applied, but no sediment appeared.

3. To this water impregnated with some few drops of vitriolic acid, fixed vegetable

vegetable alkali was applied, which cast down a grumous sediment.

4. Two drams of caustic volatile alkali occasioned no immediate change in a wine glass full of this water; nor caustic fixed alkali; but in the course of twelve hours a thin earthy pellicle was observed on the surface of the water in both glasses, and their sides were likewise encrusted.

5. Mild fixed alkali caused no immediate change, but after standing some hours, small grumes appeared on the glass; and in another experiment, a saline pellicle was observed to be on the surface of the water, and minute crystals to adhere to the sides of the glass.

6. Two drams of spirits of wine, in a wine glass full of this water, caused no perceptible change.

7. Logwood

7. Logwood cast a red colour.
8. Rhubarb cast an orange colour, changing to a red.
9. Syrup of violets cast a green colour.
10. Galls cast an amber colour, and after standing twenty-four hours, a green circle appeared at the top of the glass.
11. It curdled soap in fine grumes.
12. It boiled beef, in many parts, of a red colour,
13. A solution of the sal cœrulefaciens cast a Prussian blue colour in this water.
14. The matter remaining after evaporation had a saltish taste; it effervesced strongly with oil of vitriol, and it sparkled greatly on the red hot shovel.
15. When this water was evaporated to half its former quantity, it became bitter.

E

From

From these experiments I am inclined to think that this water is selenitic, and that it is also, in a very small degree, impregnated with iron and sulphur, and with a little of the nitrum calcarium, or purging salt, of Dr. Ruttty. It is comparatively a light water ; and if it act as a purgative, it is chiefly because of its diluent power and its coldness : and that it hath power to remove even an obstinate costiveness, the following case will fully testify.

Mrs. Hollingsworth of Springfield was, some time ago, seized with a flooding, attended with abortion, and not long after she suffered much from a quotidian fever, which, together with her former complaint, brought on so great a debility, that she was confined to her bed for many months ; during which time she was troubled with an obstinate costiveness,

tiveness, which was never removed but with difficulty ; and of course, it contributed to her state of debility. She had never refused whatever medical assistance could be administered to her ; and Dr. Menish of Chelmsford finding that she received but little or no relief, recommended to her the use of the *cold* medicinal waters ; wisely judging, that by invigorating the powers of the stomach and intestines, they would prove more capable of protruding their contents and thereby removing the costiveness ; he proposed her drinking a quarter part of a pint twice a day of a chalybeate water, which was raised by a pump in the old gaol at Chelmsford ; but that water being difficult to be procured, and also being informed of this medicinal water at Springfield, arising in a field belonging to Mr. Pugh ; he advised her to have

recourse to that, which she drank according to direction, and soon experienced the happiest effects from it; for in proportion as the excretions became regular, her spirits and strength were renewed.

LITTLE

LITTLE DUNMOW WATER.

THIS spring rises in the parish of Little Dunmow near Felsted in Essex.

Its taste is ferruginous, it is not turbid, and there is much red ochreous earth about it.

1. Galls at the fountain head cast a light purple colour, which after forty-eight hours standing, changed to a dark green: and when the water had been drawn from the well two days, it became, with galls, of a bright amber colour.

2. Logwood at the fountain head cast an atro-cœrulean colour, but the water, after having been drawn twenty-four hours from the well, struck with logwood a light blue.

3. Phlogistic alkali, and vitriolic acid, as also the sal cœrulefaciens cast a

perfect Prussian blue colour in this water.

4. Caustic volatile alkali cast a blue cloud.

5. The fixed and volatile alkalis made the water cloudy.

6. It effervesced with vitriolic acid, but no sediment appeared, and the water became more limpid.

7. Rhubarb cast a red colour.

8. Syrup of violets cast a green colour.

9. Saccharum saturni made it very milky, and it deposited a white sediment.

10. It boiled beef of a reddish colour.

11. It did not curdle milk, though boiled with it in equal quantity.

12. Two quarts of this water, which were evaporated to driness, left but little more than a grain of matter, which melted

melted readily in the mouth, and it had an alkaline taste.

This comparatively light and pure chalybeate water, from its being so little loaded with matter, should be drank at the fountain head. It greatly resembles the Tunbridge water, and exceeds it in lightness; and therefore it highly deserves the attention of its neighbourhood.

Dr. Allen hath observed, “ that this water is an excellent remedy for obstructions of the glands of the mesentery, wherein (besides the sign of chylous excrements, and rejection of food an hour or two after eating) the patient complains not of want of appetite, discernible fever, pain, nor other disorder, until fever, cough, and want of rest, proceed with loss of flesh upon the continuance of the disease; that, in this case,

case, this light chalybeate hath not failed those who have tried it."

Persons who are apoplectic, and who are subject to convulsive diseases, (wherein, by an unequal tone of the vascular system, the blood is impelled, in too great quantity, to the head and upper parts of the body) will find great relief from this water; for it will act as an active and universal tonic; and it deserves consideration, that in the cure of diseases arising from this cause, acrid clysters are far more effectual, than general bleeding from the system; although, perhaps, not to be preferred before topical bleeding; for the blood in the body does not so much offend from its general quantity, as from its unequal distribution.

F I N I S